

ABSTRACT

[0058] A recycling and recovery system and process comprising a flash gas separator that receives a slurry comprising liquid medium and solid polymer particles. The flash gas separator separates the diluent from the solid polymer particles as a vapor stream comprising at least diluent and heavies. A line receives the vapor stream from the flash gas separator. The line leads to a heavies removal system that yields a liquid that is relatively concentrated in heavies and a diluent vapor that is relatively free of heavies. The liquid is passed to a heavies column, while the diluent vapor is passed to a diluent recycle chamber and then recycled to a slurry polymerization reactor without additional treatment to remove heavies.